CHILMARK
R E S E A R C H

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RESEARCH AGENDA

CONTENTS

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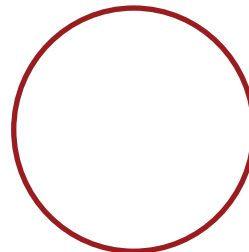**Jody Ranck, DrPH**
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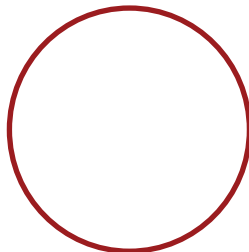
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RESEARCH DOMAINS

We have segmented the various themes that we cover into four specific macro 'Domains' to frame our research and identify the topics that are most important to the evolving tech-enabled care paradigm.

AI / ML in Healthcare

In a very short time, Artificial Intelligence and Machine Learning technologies have begun to dramatically improve operations and business tactics in many enterprise industries. In the past, we covered this category of innovation as part of our Analytics research, but the broad application of these approaches across different use cases drove us to establish a dedicated domain to monitor all the activity and developments related to 'augmented intelligence.'

> **Topics covered**: Bias and Transparency, Trust, Digital Twins, Organizational Transformation, Clinical Decision Support, Business Intelligence, Smart Scheduling, Life sciences modelling

Omnichannel Care

Patients are starting to expect everyday experiences in healthcare that resemble what they've learned to appreciate in other areas of their life. Omnichannel Care specifically looks at the ability to enable care across multiple sites of delivery while ensuring that all stakeholders are aware of encounters, plans of care, or treatments administered. Omnichannel Care happens in and out of scheduled encounters, at any location, leveraging technology to provide care, insight, and monitoring. It also implies the ability to understand the full patient context and interact with them in the most effective way, using multiple modalities of communication such as email, text, phone, and/or app.

> **Topics covered**: Behavioral Health, Virtual Care, Hospital-at-Home, Retail Care, Digital Therapeutics, Direct contracting

Real World Data / Real World Evidence (RWD/RWE)

The HITECH Act drove the mass adoption of digital health records across the country. Meaningful Use was the first effective incentive to move from paper to digital for a lot of care organizations, and we are only just seeing the true impact of that as this data moves to the cloud and begins to flow more freely between linked organizations. The RWD/RWE domain covers the secondary uses of clinically-generated data for research purposes.

> **Topics covered:** Life science and pharmaceutical use (Clinical trials recruitment and planning, Orphan disease opportunities, Efficacy data for risk-bearing contracts, etc), Development of new best practices for care, [Note: We will *not* cover pharma uses of clinical data for sales team purposes]

Value-Based Care (VBC)

At Chilmark, we believe the only way to effectively curtail the rising costs of healthcare is by changing a significant percentage of reimbursement away from Fee-for-Service (FFS) to risk-bearing VBC models. Enabling this shift, however, requires substantial information technology capabilities to analyze performance, develop networks and negotiate contracts, meet reporting requirements, and streamline communications between different stakeholders.

> **Topics Covered:** Population Health Management, Prior authorization, Administrative efficiency, RCM/Fintech in healthcare, Direct contracting

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2022 PLANNED PUBLICATIONS*

AI for Operations Market Trends Report (carry-over from 2021)

Lead Analyst: Jody Ranck

Released: Early December 2021

Current Status: Released (Preview, Press Release)

Abstract

This report will focus on AI applications that address critical operational functions of healthcare organizations including revenue cycle management, prior authorizations, conversational AI, supply chain management, claims processing, scheduling and workforce optimization.

Sample of Vendors to be Considered:

> Change Healthcare, Codoxo, Health Catalyst, HospitalIQ, Infinitus, LeanTaas, Olive, Optum, Waystar

Analytics for Value Based Care Market Trends

Lead Analyst: Jody Ranck, John Moore

Anticipated Release: February / March

Current Status: Researching and Writing

Abstract

Current state and trajectory for offerings that support value-based care, including but not limited to network design and optimization, risk adjustment, care and coding gaps, cost and utilization management, and workflow integration. It will also discuss how data science and AI are contributing to these offerings.

Sample of Vendors to be Considered:

> 3M, Allscripts, Arcadia, athenahealth, Cedar Gate Technologies, Cerner, Certilytics, Change Healthcare, Clarify Health, Epic, Health Catalyst, HealthEC, IBM, Innovaccer, Lightbeam, Medecision, NextGen, Optum, Orion Health, SPH Analytics

Consumer Experience: Creating Delightful Engagement Market Trends

Lead Analyst: Alex Lennox-Miller

Anticipated Release: March (scoping document)

Current Status: Vendor Outreach and Writing

Abstract

What are the key components of the consumer experience in healthcare? This report examines the design choice, functionalities, and enabling architectures behind consumer- and patient-facing healthcare technology. Includes mobile apps, virtual care solutions, patient engagement, network and referrals management, and other solutions targeting consumers in healthcare.

Sample of Vendors to be Considered:

> Allscripts, athenahealth, aunt bertha, Carevive, Cedar, Cerner, Change Healthcare, Epic, Epion, Experian, GetWellNetwork, Integra, Kyruus, Luma Health, Nextgen, Noona, Patient Matters, PatientPop, Phreesia, Relatient, RevSpring, Salesforce, Solution Reach, SymphonyRM, Xealth, ZocDoc

Calendar is subject to change in response to what we see developing in the industry throughout the year and client input regarding research needs.

RWD For Life Sciences Market Trends Report

Lead Analyst: John Moore

Anticipated Release: Late Q1/Early Q2

Current Status: Researching and Writing

Abstract

This research looks at the rapidly growing interest in secondary uses of healthcare data. Termed RWD/RWE for real world data / evidence, countless health IT organizations are now pivoting to offer data (clinical and claims) and evidence to support drug development, clinical trials, efficacy, and patient safety. This market has existed for years, but clinical data availability has only recently achieved the necessary scale that can be combined with sophisticated data analytic tools to enhance the value of RWD/RWE. These are also opportunities for clinical delivery organizations to capitalize on their own data assets as well directly – such as in the case of Truveta – or through partnerships with their solution vendors. The report will look at current market solutions, use cases and what will be the keys to future success as more companies look to develop new opportunities by leveraging their existing solutions and data assets.

Sample of Vendors to be Considered:

> Aetion, Allscripts, Cerner, Clarify Health, Health Catalyst, IBM, IQVIA, Optum, Premier, TriNetX, Truveta

AI, Trust and Ethics: The Path Forward (Insight Report)

Lead Analyst: Jody Ranck

Anticipated Release: Mid-Q2

Current Status: In Queue

Abstract

Surveys have consistently highlighted that trust is one of the key barriers to adoption of AI in healthcare. But what exactly is trust and how can companies across the ecosystem build trust across users? This paper will examine the trust factor in AI and how it may differ from other technologies. What are the key components from transparency and explainability to bias and the organizational changes needed to ensure algorithmic accountability. As AI increasingly becomes a factor in access to services and a driver of decision-making from clinicians to administrators, society will need to develop an ethical infrastructure to ensure access to recourse when decisions go awry, changes to medical tort, and standards for validation and explainability. This report will analyze some of the more controversial cases in recent years and work towards a framework for building ethical AI in healthcare. Case studies from companies offering approaches or solutions to these pressing issues will be provided.

Hospital at Home Market Scan Report

Lead Analyst: Alex Lennox-Miller

Anticipated Release: Late Q2

Current Status: In Queue

Abstract

As care continues to move out of hospitals and inpatient units, new models of care are looking at how patients can be kept in the home, what kinds of treatments are best addressed, and what tools are needed to optimize outcomes. This report will look at models of Hospital at Home care, from the CMS Beyond The Four Walls trial model to the innovative design of Mayo Clinics Advanced Care at Home. Technology concerns, infrastructure needs, SDoH factors, and more are all integral components of success in these models. Success can result in not just improved access to

care, but improved overall outcomes, reduced long-term utilization, and better longitudinal health. Topics will include devices and remote monitoring, the role of Shared Decision Making and Patient-Reported Outcomes, how to address provider and staff burden, acuity concerns, regulation, and reimbursement.

Sample of Vendors to be Considered:

> Aiva, Amwell, athenaHealth, Biobeat, Biofourmis, Caregility, Cerner, Closedloop.ai, Current Health, Epic, Equiva Health, Medocity, Olive, Philips, TalkDesk, Vivify Health, WellDoc

RWEs/ePROs for Therapeutic Value Insight Report

Lead Analyst: John Moore

Anticipated Release: 2022Q3

Current Status: In Queue

Abstract

Real world evidence is required to prove the efficacy and value of a given therapeutic. Traditionally, such evidence has been gathered from claims data and biometric data collected from participants in a clinical trials study at a central study site. With the increasing adoption of remote patient monitoring (RPM) devices we can collect data directly from the patient regardless of their location. Combining autonomous, biometric data collection with an ability for patients to remotely report their experiences e.g., side effects, via a mobile device (smartphone) will strongly support the migration to distributed clinical trials that provide a finer level of granularity on a therapeutic's potential value.

Sample of Vendors to be Considered:

> clinCapture, Curebase, IQVIA, Medable, Medrio, Obvio Health, uMotif

AI Driven Imaging Clinical Decision Support - Market Trends Report

Lead Analyst: Jody Ranck

Anticipated Release: 2022Q3

Current Status: In Queue

AI Driven Imaging Clinical Decision Support - Market Trends Report (cont'd)

Abstract

Medical imaging is one of the most mature areas of AI development in healthcare due to the unique history of image databases in the development of machine learning in areas outside of healthcare. In this report we will analyze the maturity and market for medical imaging AI-based companies as well as assess some of the recent challenges. COVID accelerated work in this market, however we learned one year into the pandemic that many of the published models for diagnosing COVID from medical images did not perform well. What are the key technical challenges and how readily do radiologists adopt AI-based solutions in their work? We will cover the leading vendors in this space and create a forecast for the future of the AI-based clinical decision support tools for medical imaging.

Sample of Vendors to be Considered:

> Behold.ai, contextflow, DiA Imaging Analysis, Eclipse, Google DeepMind, Lunit, Subtle Medical, Viz.ai, Zebra Medical Vision

PHM 2.0: VBC Solution Suites - Market Trends Report

Lead Analyst:

Anticipated Release: 2022Q4

Current Status: In Queue

Abstract

Population health management (PHM) was the buzzword du jour several years ago but the bloom has faded as a true PHM solution remains an idea and not necessarily a reality in today's market. Part of the problem has been a clear and compelling business case to support the massive undertaking of true PHM in a given community or region. That is not to say PHM is dead, far from it. Rather it is morphing to become a more business driven solution suite to support the migration to value based care (VBC). This report will look at how vendor solutions are evolving to support PHM 2.0 - a business driven solution suite for VBC. Our earlier report on analytics for VBC will be the foundation to this next report that looks at how former PHM vendors are re-architecting their solutions to support VBC business case(s).

Sample of Vendors to be Considered:

> Allscripts, Arcadia, AthenaHealth, Cerner, Certilytics, Epic, Geneia, Health Catalyst, IBM, Lightbeam, Medecision, NextGen, Optum, Persivia, and Philips

Omnichannel Solutions for Behavioral Health Market Trends Report

Lead Analyst: Alex Lennox-Miller and Scott Kirschner

Anticipated Release: 2022Q4

Current Status: In Queue

Abstract

We will look at the vendors and solutions addressing behavioral health in a number of contexts, from general consumer mindfulness to support for chronic patients and full behavioral health care. Behavioral health has been a long-neglected part of preventative and longitudinal healthcare, with limited reimbursements and vastly insufficient resources for patients and providers. Now it represents one of the fastest growing virtual care sectors and one of the largest opportunities for making significant improvements in patient quality of life. This report will look at how solutions are leveraging AI/ML, conversational NLP, data interoperability, and innovations in user experience to approach the growing needs of patients, support providers and healthcare organizations, and create an integrated healthcare experience, as well as the differences in market approaches and what new opportunities exist in the space.

Sample of Vendors to be Considered:

> Allscripts, Amazon, Amwell/Silvercloud, athenaHealth, Binah.ai, Brave Health, Cerner, Ellipsis Health, Epic, Headspace, Kintsugi, Medocity, Neuroflow, Qure4U, SonderMind, Teladoc

Virtual Care, Triage, and Navigation Market Trends Report

Lead Analyst: TBD

Anticipated Release: TBD

Current Status: Currently in limbo

Abstract

This report will look at the growing market for patient front doors that can make a real difference in the patient and provider experience. These tools help alleviate provider and staff burden, make it easier for patients to access care, and can help keep patients within their provider network. Within that space, however, customers are coming from more sectors of the healthcare industry than ever before, while products are approaching the needs of patients and providers very differently. This report will look at the buyers of these technologies, their goals and priorities, how regulation and reimbursement are shaping this space, and how vendors are designing their products and user experiences to produce different outcomes.

Sample of Vendors to be Considered:

> Ada Health, Amwell, Bright.md, Buoy Health, Cerner, Deliver Health, Epic, GYANT, Healthfully, Teladoc, Vivify Health

IT Enablement of Chronic Care at Home - Market Trends Report

Lead Analyst: Alex Lennox-Miller

Anticipated Release: 2022Q4

Current Status: In Queue

Abstract

Chronic care and the systemic cost reductions available from well-managed patients have become a major concern of health systems, payers, and self-insured employers. In our Omnichannel Care Management MTR, we focused on the tools helping providers to manage patients. In this report, we will focus on products directly providing chronic care remotely, from monitoring and reporting to interactive engagement and coaching. It will examine the growth of IT-enabled services, platforms allowing provider networks to offer services to more patients than ever before, the expansion of integrated offerings providing support for comorbidities like behavioral health, the use of AI/ML to assist and supplement workforces, and the reimbursement environment changing how patient care is being provided.

Sample of Vendors to be Considered:

> Allscripts, Arcadia, AthenaHealth, Cerner, Epic, Geneia, Health Catalyst, IBM, Lightbeam, Medecision, NextGen, Optum, Persivia, and Philips

SPONSORED RESEARCH OPPORTUNITIES

Below are topics that we have identified as important to the future state of healthcare IT, but believe are too narrowly focused for us to justify as part of our syndicated research agenda and therefore require dedicated sponsorship to produce. Please email Colin (colin@chilmarkresearch.com) to schedule a time to discuss any of the following options that can help educate the market on specific use cases of new technologies.

Robotic Process Automation in Revenue Cycle Management

A deep look into the automation technologies emerging for use in revenue cycle, and their use in fee-for-service, value-based care, and alternative payment contracts. Includes front desk, back office, and mid-encounter automation designed to improve billing, approvals, and appeals. Inquire for more information.

New IT Platforms to Support MA/Direct Contracting Entities (Insight Report)

Inquire to express interest and discuss details.

Platforms of Healthcare IT: Administration, Engagement and Care Delivery

Inquire to express interest and discuss details.

Telehealth Cannot Fix Everything: New Best Practices for Establishing an Effective Telehealth Program

Inquire to express interest and discuss details.

Digital Twins: What they are, how they are being used, and their future role in medicine

Inquire to express interest and discuss details.

Prior Authorization: Automating Care Paths

Inquire to express interest and discuss details.

IT Enabled Services: Outsourcing Data Science and Operational Excellence

Inquire to express interest and discuss details.

REPORT TYPES EXPLAINED

Market Trends Report (MTR)

Our signature, Domain-defining report format. The result of 6-9 months of research and writing, these reports scope out our definition of solutions for the covered domain, the major market trends shaping the evolution of these solutions, and evaluates vendors on their ability to deliver on the current and coming needs of healthcare organizations. **Retail Cost: $6,000**

> Examines trends influencing the changing needs of healthcare organizations, and the capabilities required to meet the current and future expectations of users.

> Includes full vendor profiles and rankings (typically 15-20 profiles). These are thorough, objective evaluations of the leading vendors for the use case(s) being examined.

> Valuable for vendor selection process with a deep market scan of trends and future considerations, and reviews vendors' abilities to meet those future needs.

> *Samples*: 2018 Population Health Management MTR, 2019 Payer Analytics MTR, 2021 Virtual Care Management MTR (Preview of new slide-based format)

Market Scan Report (MSR)

MSRs examine an emergent, typically immature and rapidly evolving space in health IT. These reports scope the emerging market, identify the forces influencing adoption and growth of these solutions, and examine the leading vendors operating in the space. **Retail Cost: $2,750**

> Presents definition and framework for evaluating emerging products.

> Contains 6-15 abbreivated vendor profiles (relative to MTR profiles).

> *Samples*: The Promise of AI/ML in Healthcare: Opportunities, Challenges, and Vendor Landscape, 2019 Primary Care for the 21st Century MSR, Natural Language Processing: Unlocking the Potential of a Digital Healthcare Era,

Insight Reports

Exclusive to Advisory Service. These reports are shorter, more narrowly scoped research projects that focus on one specific trend or aspect of current and emerging technologies within our Domains of coverage.

> Reports are generally 12-20 pages long.

> *Samples*: 2019 Precision Medicine and HIT: New Data, New Challenges, 2018 Capturing the Patient Experience: Current Challenges and Future Needs, Tackling Prior Auth: New Solutions to Address Provider-Payer Friction

Domain Monitors/Bights

Exclusive to Advisory Service. Articles released on a monthly basis to Advisory Service subscribers. Concise, deep-dive research that discusses recent findings from our analysts (Monitors) or timely reactions and insights related to recent industry news (Bights).

> Concise, digestible insights from our analyst team.

> *Samples*: Lessons on AI-ML after 1 year of COVID, Digital Therapeutics - Market Issues for an Emerging Technology, Has Microsoft Learned from their Mistakes? (re: Nuance Acquisition), UHG's Acquisition of Change Healthcare

Sponsored Research

Inquire for opportunities to develop thought leadership by sponsoring publicly available industry education. Contact Colin (colin@chilmarkresearch.com) to schedule a call to learn more and discuss options. Advisory Service clients are granted first option to participate in any planned projects.